

FILED

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U.S. DISTRICT COURT  
EASTERN DISTRICT OF MO  
ST. LOUIS

UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MISSOURI  
EASTERN DIVISION

UNITED STATES OF AMERICA,

)

Plaintiff,

)

v.

)

HAITAO XIANG,

)

Defendant.

)

**4:19CR980 HEA/JMB**

**INDICTMENT**

The Grand Jury charges:

Introduction and Background

At all times relevant to this Indictment:

1. Monsanto Company (Monsanto) was an agrochemical and agricultural biotechnology corporation headquartered in St. Louis, Missouri. Monsanto's research and development focused on producing seed and other agricultural products in addition to developing strategies to improve food production and agricultural science. Bayer AG acquired Monsanto in 2018, and Monsanto was a subsidiary of Bayer.

2. The Climate Corporation (TCC) was an agricultural and technology company headquartered in Creve Coeur, Missouri. TCC was a digital agriculture company whose business focused on examining weather, soil, and field data to assist farmers in determining potential yield-limiting factors in their fields. TCC was an independently operated, wholly owned subsidiary of Monsanto.

3. From 2008 to June 2017, Defendant Haitao Xiang was a citizen of the People's Republic of China (PRC) and a legal permanent resident of the United States.

4. Beginning in 2008 and continuing through at least June 2017, Defendant Xiang was employed at Monsanto as a Senior Research Applications Engineer. While employed at TCC, Defendant Xiang worked as an Advanced Imaging Scientist, responsible for remote sensing work to estimate soil properties using satellite imagery.

5. While employed at Monsanto and TCC, Defendant Xiang worked on, among other things, a component of a digital, on-line farming software platform. The component was referred to as a Nutrient Optimizer. His work in this area was related to research supporting the Nutrient Optimizer's remote sensing to estimate soil properties using satellite imagery.

6. The PRC established a national policy to identify and recruit individuals located outside the PRC who had expert skills, abilities, and knowledge that could aid in transforming China's economy. These programs, instituted in the early 1990s, were commonly referred to as "Talent Programs." In 2007, the Talent Programs were added to the Constitution of the Communist Party of China.

7. One Talent Program, referred to as the "Hundred Talent Program" (HTP), started in 1994 with the original purpose of recruiting 100 outstanding scholars from both home and abroad by the end of the 20th century.

8. Persons recruited into the HTP (Talent Recruits) signed contracts covering their participation in Talent Programs. These contracts obligated the Talent Recruits to work for a specified period of time in the PRC, and often detailed the specific research the Talent Recruit would perform or specify the business that was to be developed by the proposed new company. This contractual obligation closely resembled, or even replicated, the work the Talent Recruit performed for his or her former employer, thus demonstrating the Talent Recruit's willingness to leverage knowledge, research, and intellectual property obtained from United States businesses, universities, and the U.S. government. The contractual relationship differentiated Talent Programs

from standard scientific research grants or conventional international collaboration in that rather than conducting basic scientific research, Talent Recruits were contractually obligated to perform services for the PRC in support of its strategic national development goals and economic revitalization.

9. The Chinese Academy of Sciences (CAS) was a scientific research institution and ministry under the State Council of the PRC, which was the highest executive arm of power and administration in the PRC. The CAS, headquartered in Beijing, comprised over one hundred research institutes, twelve branch academies, and three universities throughout the PRC. CAS offered a variety of highly competitive Talent Plans.

10. Founded in 1953, the Nanjing Institute of Soil Science was a component of the CAS. The Nanjing Institute of Soil Science focused on scientific agricultural development and ecological environmental development in China, and was a training base for senior researchers.

11. Recently, the PRC announced two initiatives that included a focus on agricultural productivity and modernization. In 2015, the PRC announced the “Made in China 2025,” which sought to enhance the PRC's innovation, productivity, quality, digitalization, and efficiency in ten sectors, including information technology and agricultural machinery. The PRC's Thirteenth Five-Year Plan (2016-2020) also listed Agricultural Modernization as a major project. Specifically, Chapter 20 of the Plan listed as a goal to: Improve Technology and Equipment and Increase Information Technology Application in Agriculture. With the aim of raising agricultural productivity, the PRC would endeavor to improve systems for promoting innovation in, and the application of, modern agricultural science and technology, accelerating agricultural mechanization, strengthening the integration of information technology into agriculture, and developing intelligent agriculture. The Plan promoted the development of intelligent agriculture through big data by strengthening agricultural information services, accelerating the development

of agriculture-related e-commerce, transforming nitrogenous fertilizer, and encouraging internet enterprises to establish agricultural service platforms that would bring together production and marketing.

Monsanto and TCC Technology

12. Over the course of numerous years, Monsanto and TCC researched and developed a digital, on-line farming software platform. The platform was used by farmers to collect, store, and visualize critical agricultural field data. It monitored and measured the impact of agronomic decisions based on crop performance and assisted farmers in customizing fertility and seeding plans for agricultural fields to optimize yield and maximize profitability.

13. Monsanto and TCC scientifically developed the platform to increase and improve agricultural productivity for farmers. A primary application within the platform was a scientific formula and methodology that provided farmers guidance concerning the optimal application and use of nutrients as fertilizer components. Within that application, Monsanto and TCC developed a Nutrient Optimizer that was a proprietary predictive algorithm to assist farmers in the optimal application of plant nutrients. The Nutrient Optimizer was an essential component of the digital farming software platform. It was also part of the application that worked as a web-based tool that allowed farmers to monitor the nutrient status of their fields in real-time by combining the latest weather data, soil information, and management information within a scientific model. In addition, it allowed farmers to test the effectiveness of various nutrient management scenarios by predicting the likely end-of-season nutrient status, as well as the uncertainty of the nutrient status due to weather, to allow more precise subsequent fertilization to optimize inputs for the next crop. The scientific foundation of the Nutrient Optimizer was a point-based biogeochemical process model that simulated biological, chemical, hydrological, and thermal processes occurring within an agricultural field.

14. Monsanto and TCC distributed, sold, and used the digital, on-line farming software platform containing the Nutrient Optimizer throughout the United States and in interstate and foreign commerce.

15. Monsanto and TCC considered the Nutrient Optimizer to be confidential, proprietary information and a highly valuable trade secret as defined in 18 U.S.C. § 1839(3). Monsanto and TCC's Nutrient Optimizer was a point-based biogeochemical process, comprised of the following categories or software modules of proprietary technology:

a. A crop growth module, which simulated plant growth and nutrient uptake that was business, scientific, technical, economic, or engineering information. It included patterns, plans, compilations, program devices, formulas, designs, methods, techniques, processes, procedures, programs, or codes;

b. A surface hydrology module, which described moisture dynamics between precipitation and infiltration that was business, scientific, technical, economic, or engineering information. It included patterns, plans, compilations, program devices, formulas, designs, methods, techniques, processes, procedures, programs, or codes;

c. A soil moisture module, which simulated water availability and distribution in the soil that was business, scientific, technical, economic, or engineering information. It included patterns, plans, compilations, program devices, formulas, designs, methods, techniques, processes, procedures, programs, or codes;

d. A surface and soil temperature module, which simulated the temperature at the top of the soil surface as well as subsurface soil temperatures that was business, scientific, technical, economic, or engineering information. It included patterns, plans, compilations, program devices, formulas, designs, methods, techniques, processes, procedures, programs, or codes;

e. A soil chemistry module; which simulated the nutrient movement and associated processes within an agricultural soil that was business, scientific, technical, economic, or engineering information. It included patterns, plans, compilations, program devices, formulas, designs, methods, techniques, processes, procedures, programs, or codes; and

f. A tillage, harvest, and crop residue module, which described how farmer practices might impact the soil system and other modules that was business, scientific, technical, economic, or engineering information. It included patterns, plans, compilations, program devices, formulas, designs, methods, techniques, processes, procedures, programs, or codes.

16. Working together, these six modules formed the Nutrient Optimizer, and the overall point-based biogeochemical process that ultimately powered the digital platform.

17. Monsanto and TCC took the following measures to protect the Nutrient Optimizer from unauthorized use:

a. Monsanto and TCC maintained perimeter security to restrict physical access to the property, particular buildings, and facilities.

b. Monsanto required employees to execute non-disclosure agreements as a condition of their employment.

c. Monsanto required employees to complete annual training on the protection and confidentiality of sensitive proprietary, trade secret, copyright, and patent materials and on business standards of conduct including how to properly handle Monsanto and TCC's proprietary information and trade secret.

d. Monsanto required employees to wear visible access badges to enter Monsanto facilities.

e. Monsanto maintained video security cameras both inside and outside Monsanto facilities and security guards and specialists monitored the cameras twenty-four hours a day.

f. Access to Monsanto's computer system required an assigned log-in and password. Monsanto computers also displayed a Security Banner advising employees that the computer system was available to them for work-related reasons and was subject to monitoring.

g. Monsanto used a dual (two-factor) authentication Virtual Private Network (VPN) and hard drive encryption.

h. Monsanto and TCC limited access to proprietary information and trade secrets only to authorized persons who needed access to them in order to perform their employment duties. Persons who were permitted access used internal Monsanto and TCC systems with multiple factor login identification credentials.

i. Monsanto and TCC utilized and directed employees to use a data classification policy to classify, label, and store all data. Monsanto and TCC's policies on the use and handling of their confidential and proprietary information were communicated to employees during training, in employee handbooks, through verbal warnings at company meetings, and on signs or banners posted in the workplace. Documented research was clearly labeled with caveats to indicate whether it was proprietary, trade secret, or copyright.

j. Monsanto and TCC required separating employees to certify they had returned all property, owned by Monsanto and TCC.

18. The information contained in the Nutrient Optimizer derived independent economic value from not being generally known to, and not being readily ascertainable through proper means by, another person. An individual who stole and possessed the Nutrient Optimizer would obtain economic benefit from the disclosure and use of the information.

19. While employed at Monsanto and TCC, Defendant Xiang took training and certification courses, both in-person and online, regarding: the protection and confidentiality of sensitive, proprietary, and trade secret material including the protection of property and technical data; the transmission or disclosure of such property to other persons; restrictions on the use and dissemination of such materials outside Monsanto and TCC; control markings on Monsanto and TCC's property; information security and the safe handling of property and data; and the acceptable uses of property and data. The training and certifications included:

- a. ISO: Information Security 101 – Part 1 December 2014;
- b. ISO: Information Security 101 – Part 2 The Safe Handling of Data December 2014;
- c. Information Security: Monsanto's Acceptable Use Policy December 2015;
- d. Climate Information Security 101: Part 3, Data Security October 2016;
- e. Information Security: Safe Data January 2017; and
- f. Protecting Monsanto's Intellectual Property – Germplasm Pedigrees January 2017.

20. When Defendant Xiang began his employment with Monsanto and TCC, he executed an employment agreement. In the agreement he acknowledged, among other things, that:

- a. he would devote his work to the service of Monsanto and TCC and comply with company policies and procedures, including those relating to security and employee conduct;
- b. he would not engage in any business or technical activity, competitive with or in conflict with the business interests of Monsanto or TCC;
- c. during the course of his employment he would acquire and have access to non-public confidential business information, including engineering designs, drawings, formulae, calculations, data, or similar technical or project-related information which is to be kept confidential;

d. such confidential information and property was proprietary, highly sensitive, and valuable, and he was entrusted to protect such property and information;

e. he would use his best efforts and diligence both during and after his Monsanto employment to protect the confidential, trade secret, and/or proprietary character of all confidential information;

f. he would not, directly or indirectly, use (for himself or another), or disclose any confidential information for as long as it remained proprietary or protectable as confidential or trade secret information; and

g. at the termination of his employment, he would deliver and give back to Monsanto and TCC, without retaining any copies, all documents and files (whether paper, digital, electronic or otherwise) supplied to him, or that were obtained or created pursuant to his duties, as well as reference books, text books, computer software, research lab books equipment, supplies, and any other materials supplied to him by Monsanto and TCC.

**COUNT ONE**  
**(Conspiracy to Commit Economic Espionage)**  
**18 U.S.C. Section 1831(a)(5)**

21. The allegations set forth in paragraphs 1 through 20 of this Indictment are hereby re-alleged and incorporated herein as if set forth in full.

22. Beginning on a date unknown to the Grand Jury and continuing until on or about June 10, 2017, in the Eastern District of Missouri and elsewhere,

**HAITAO XIANG**

the defendant herein, together with others known and unknown to the Grand Jury, did knowingly combine, conspire, confederate, and agree intending and knowing the offense would benefit a foreign government, namely the People's Republic of China, and a foreign instrumentality, that being CAS Nanjing Institute of Soil Sciences to:

a. steal and without authorization appropriate, take, carry away, and conceal, and by fraud, artifice, and deception obtain a trade secret belonging to TCC and Monsanto, that being the Nutrient Optimizer;

b. without authorization copy, duplicate, sketch, draw, photograph, download, upload, alter, destroy, photocopy, replicate, transmit, deliver, send, mail, communicate, and convey a trade secret belonging to TCC and Monsanto, that being the Nutrient Optimizer;

c. receive, buy, and possess a trade secret, knowing the same to have been stolen and appropriated, obtained, and converted without authorization a trade secret belonging to Monsanto and TCC, that being the Nutrient Optimizer;

Manner and Means of the Conspiracy

23. Defendant Xiang would and did carry out the conspiracy and effect its unlawful objects, that is the theft and possession of trade secret information owned by Monsanto and TCC, for the benefit of a foreign government and foreign instrumentality through the following manner and means, among others:

24. From at least June 2015 through June 2017, while working for TCC, Defendant Xiang communicated with persons known and unknown who worked for the PRC government concerning future employment opportunities at the CAS Nanjing Institute of Soil Science for Defendant Xiang.

25. Defendant Xiang applied for and, was ultimately recruited into, the HTP.

26. During his employment with TCC and Monsanto, Defendant Xiang travelled both within the United States and to the PRC to meet with individuals known and unknown to the Grand Jury for purposes of discussing future employment with the PRC government at the CAS.

27. During his employment with Monsanto and TCC, Defendant Xiang spoke with individuals located in the PRC and discussed the knowledge, skills, and abilities he could bring to

the CAS Nanjing Institute of Soil Science if offered the opportunity to work for the CAS Nanjing Institute of Soil Science.

28. In furtherance of the conspiracy and to achieve the objects and purposes thereof, the Defendant Xiang committed and caused to be committed the following acts, among others, in the Eastern District of Missouri and elsewhere:

a. Between in or about June 2015 through November 2015, Defendant Xiang sent a series of communications to individuals known to the Grand Jury who were located in the PRC. During the course of the communications, Defendant Xiang asked to be recruited into the CAS Nanjing Institute of Soil Science in the PRC. Defendant Xiang inquired about the Hundred Talents Program and the application process for employment in the PRC.

b. Between March 26, 2014 and June 9, 2017, Defendant Xiang copied, duplicated, transmitted, and downloaded the Nutrient Optimizer from Monsanto systems.

c. In February 2016, Defendant Xiang had a series of communications with individuals known to the Grand Jury who were located in the PRC and who were recruiters for the PRC Talent Plans. During the communications, Defendant Xiang submitted his application for the HTP. In accompanying documents and communications, Defendant Xiang described the skills and work he would be able to offer the CAS Nanjing Institute of Soil Science. His descriptions included details and abilities that are consistent with, and could only be accomplished through the use of, the digital farming software platform and the Nutrient Optimizer.

d. On March 14, 2016, Xiang conducted the following Google searches on a Monsanto computer: "company information to the third party;" "as evidence to accuse me;" "can use it to against me in future;" "I don't want it to be an evidence;" and "to be a piece of evidence that."

e. In April 2016, Defendant Xiang travelled from the United States to the PRC to meet recruiters from the HTP and to interview for a position with the CAS Nanjing Institute of Soil Science.

f. In August 2016, Defendant Xiang was selected as a CAS Nanjing Institute of Soil Science HTP recruit.

g. From November 2016 through May 2017, Defendant Xiang and persons known to the Grand Jury who were located in the PRC communicated about Defendant Xiang's future employment with the CAS Nanjing Institute of Soil Science, the details of his future job, compensation, benefits, and the type of research Defendant Xiang would conduct.

h. On May 24, 2017, Defendant Xiang notified TCC and Monsanto that he intended to resign from his employment with his final day of employment being June 9, 2017.

i. On or about June 9, 2017, Defendant Xiang resigned from Monsanto and TCC and participated in an exit interview. During the interview Defendant Xiang stated and represented to Monsanto and TCC, among other things, that:

i. he shredded all physical documents from Monsanto and TCC and retained no electronic storage devices, such as USBs or hard drives, containing Monsanto or TCC property and information;

ii. he never sent any Monsanto or TCC confidential information to his private email addresses;

iii. he had no Monsanto or TCC confidential business information stored on any private online drive, computer, or other electronic device; and

iv. he returned all non-public Monsanto and TCC property and information, in any form, including any information and property regarding projects on which he worked while employed at Monsanto and TCC.

j. On or about June 9, 2017, Defendant Xiang signed and acknowledged his Monsanto and TCC "Employment Agreement and Proprietary Information and Inventions Agreement Reminder" and TCC's "Termination Certification." In those documents, Defendant Xiang certified among other things, that:

i. He did not possess or fail to return any devices, records, data, notes, reports, proposals, lists, correspondence, specifications, drawings, blueprints, sketches, materials, equipment, any other documents or property, or reproductions of any and all aforementioned items belonging to Monsanto and TCC, its subsidiaries, affiliates, successors, or assigns; and

ii. In compliance with his At-Will Employment, Confidential Information, Invention Assignment, and Arbitration Agreement, he would preserve as confidential all Monsanto and TCC Confidential Information and Associated Third Party Confidential Information, including trade secrets, confidential knowledge, data, or other proprietary information relating to products, processes, know-how, designs, formulas, developmental or experimental work, computer programs, databases, other original works of authorship, customer lists, business plans, financial information, or other subject matter pertaining to any business of Monsanto and TCC or any of its employees, clients, consultants, or licensees.

k. Finally, during the interview, Defendant Xiang was confronted with the Google searches he conducted on March 14, 2016, which are listed above in paragraph 28(d).

l. After completing his interview with Monsanto, between June 9 and 10, 2017, Defendant Xiang copied and downloaded the Nutrient Optimizer to a Micro SD Card, and drove from St. Louis Missouri, to Chicago O'Hare airport. Defendant Xiang purchased a same-day, one-way ticket to China. Prior to boarding the plane, Defendant Xiang possessed electronic devices that contained copies of Monsanto and TCC's confidential property and trade secrets, specifically, copies of the Nutrient Optimizer.

All in violation of Title 18, United States Code, Section 1831(a)(5).

**COUNT TWO**  
**(Economic Espionage)**  
**18 U.S.C. §§ 1831(a)(1) and 2**

1. The allegations set forth in paragraphs 1 through 20 and 23 through 28 of this Indictment are re-alleged and incorporated herein as if set forth in full.
2. Beginning on a date unknown to the Grand Jury and continuing until on or about June 10, 2017, in the Eastern District of Missouri and elsewhere,

**HAITAO XIANG**

the defendant herein, intending and knowing that the offense would benefit a foreign government, namely the PRC, and a foreign instrumentality, namely the CAS Nanjing Institute of Soil Science, did knowingly steal and without authorization appropriate, take, carry away, and conceal, and by fraud, artifice, and deception obtain a trade secret belonging to TCC and Monsanto, that being the Nutrient Optimizer.

All in violation of Title 18, United States Code, Sections 1831(a)(1) and 2.

**COUNT THREE**  
**(Economic Espionage)**  
**18 U.S.C. §§ 1831(a)(3) and 2**

1. The allegations set forth in paragraphs 1 through 20 and 23 through 28 of this Indictment are re-alleged and incorporated herein as if set forth in full.
2. Beginning on a date unknown to the Grand Jury and continuing until on or about June 10, 2017, in the Eastern District of Missouri and elsewhere,

**HAITAO XIANG**

the defendant herein, intending and knowing that the offense would benefit a foreign government, namely the PRC, and a foreign instrumentality, namely the CAS Nanjing Institute of Soil Science,

did knowingly receive, buy, and possess a trade secret belonging to TCC and Monsanto, knowing the same to have been stolen and appropriated, obtained, and converted without authorization, that being the Nutrient Optimizer.

All in violation of Title 18, United States Code, Sections 1831(a)(3) and 2.

**COUNT FOUR**  
**(Attempted Economic Espionage)**  
**18 U.S.C. §§ 1831 (a)(4) and 2**

1. The allegations set forth in paragraphs 1 through 20 and 23 through 28 of this Indictment are re-alleged and incorporated herein as if set forth in full.

2. Beginning on a date unknown to the Grand Jury and continuing until on or about June 10, 2017, in the Eastern District of Missouri and elsewhere,

**HAITAO XIANG**

the defendant herein, intending and knowing that the offense would benefit a foreign government, namely the PRC, and a foreign instrumentality, namely the CAS Nanjing Institute of Soil Science, did knowingly attempt to without authorization copy, duplicate, sketch, draw, photograph, download, upload, alter, destroy, photocopy, replicate, transmit, deliver, send, mail, communicate, and convey a trade secret belonging to TCC and Monsanto, that being the Nutrient Optimizer.

All in violation of Title 18, United States Code, Sections 1831(a)(4) & (a)(2); and 2

**COUNT FIVE**  
**(Conspiracy to Commit Theft of Trade Secrets)**  
**18 U.S.C. § 1832(a)(5)**

1. The allegations set forth in paragraphs 1 through 20 and 23 through 28 of this Indictment are re-alleged and incorporated herein as if set forth in full.

2. Beginning on a date unknown to the Grand Jury and continuing until on or about June 10, 2017, in the Eastern District of Missouri and elsewhere,

**HAITAO XIANG**

the defendant herein, and others known and unknown to the Grand Jury, did knowingly combine, conspire, confederate, and agree, with intent to convert a trade secret that is related to a product or service used in or intended for use in interstate or foreign commerce, to the economic benefit of anyone other than the owner of the trade secret, and intending and knowing that the offense would injure any owner of that trade secret, to:

a. steal, and without authorization appropriate, take, carry away, and conceal, and by fraud, artifice, and deception obtain a trade secret, that being the Nutrient Optimizer, belonging to Monsanto and TCC;

b. without authorization copy, duplicate, sketch, draw, photograph, download, upload, alter, destroy, photocopy, replicate, transmit, deliver, send, mail, communicate, and convey a trade secret, that being the Nutrient Optimizer, belonging to Monsanto and TCC; and

c. receive, buy, and possess a trade secret, that being the Nutrient Optimizer, belonging to Monsanto and TCC, knowing the same to have been stolen, appropriated, obtained, and converted without authorization.

All in violation of Title 18, United States Code, Section 1832(a)(5).

**COUNT SIX**  
**(Theft of Trade Secrets)**  
**18 U.S.C. §§ 1832(a)(1) and 2**

1. The allegations set forth in paragraphs 1 through 20 and 23 through 28 of this Indictment are re-alleged and are incorporated herein as if set forth in full.

2. Beginning on a date unknown to the Grand Jury and continuing until on or about June 10, 2017, in the Eastern District of Missouri and elsewhere,

**HAITAO XIANG**

the defendant herein, with the intent to convert a trade secret that is related to a product or service used in and intended for use in interstate or foreign commerce, to the economic benefit of anyone other than the owner thereof, and intending and knowing that the offense would injure any owner of that trade secret, did knowingly steal and without authorization appropriate, take, carry away, and conceal, and by fraud, artifice, and deception obtain a trade secret, that being the Nutrient Optimizer, belonging to Monsanto and TCC.

All in violation of Title 18, United States Code, Section 1832(a)(1) and 2.

**COUNT SEVEN**  
**(Theft of Trade Secrets)**  
**18 U.S.C. §§ 1832(a)(3) and 2**

1. The allegations set forth in paragraphs 1 through 20 and 23 through 28 of this Indictment are re-alleged and are incorporated herein as if set forth in full.
2. Beginning on a date unknown to the Grand Jury and continuing until on or about June 10, 2017, in the Eastern District of Missouri and elsewhere,

**HAITAO XIANG**

the defendant herein, with the intent to convert a trade secret that is related to a product or service used in and intended for use in interstate or foreign commerce, to the economic benefit of anyone other than the owner thereof, and intending and knowing that the offense would injure any owner of that trade secret, did knowingly receive, buy, and possess a trade secret, that being the Nutrient Optimizer, belonging to Monsanto and TCC, knowing the same to have been stolen, appropriated, obtained, and converted without authorization.

All in violation of Title 18, United States Code, Section 1832(a)(3) and 2.

**COUNT EIGHT**  
**(Attempted Theft of Trade Secrets)**  
**18 U.S.C. §§ 1832(a)(4) & (a)(2) and 2**

1. The allegations set forth in paragraphs 1 through 20 and 23 through 28 of this Indictment are re-alleged and are incorporated herein as if set forth in full.
2. Beginning on a date unknown to the Grand Jury and continuing until on or about June 10, 2017, in the Eastern District of Missouri and elsewhere,

**HAITAO XIANG**

the defendant herein, with the intent to convert a trade secret that is related to a product or service used in and intended for use in interstate or foreign commerce, to the economic benefit of anyone other than the owner thereof, and intending and knowing that the offense would injure any owner of that trade secret, did knowingly attempt without authorization to copy, duplicate, sketch, draw, photograph, download, upload, alter, destroy, photocopy, replicate, transmit, deliver, send, mail, communicate, and convey a trade secret, that being the Nutrient Optimizer, belonging to Monsanto and TCC.

All in violation of Title 18, United States Code, Section 1832(a)(4) & (a)(2) and 2.

**FORFEITURE ALLEGATION**

The Grand Jury further finds by probable cause that:

1. Pursuant to Title 18, United States Code, Section 2323(b), upon conviction of an offense in violation of Title 18, United States Code, Sections 1831 and 1832 as set forth in Counts I through VIII, the defendant shall forfeit to the United States of America any property used, or intended to be used, in any manner or part to commit or facilitate commission of the offenses, and any property constituting or derived from any proceeds obtained directly or indirectly as a result of the commission of the offenses.

2. Subject to forfeiture is a sum of money equal to the total value of any property constituting or derived from any proceeds obtained directly or indirectly as a result of the commission of the offenses.

3. Specific property subject to forfeiture includes, but is not limited to, the following:

- a. a Lenovo Ideapad 1105-11IBR laptop computer serial number YD0215RM;
- b. an AT&T Sim Card;
- c. a H2O wireless 4G LTE Smart Sim ACT FAST Code 153680486;
- d. a Bionex Solution Inc. Thumb Drive;
- e. a Samsung Galaxy S5; and
- f. a Toshiba 32 Gigabyte Micro SD Card.

4. If any of the property described above, as a result of any act or omission of the defendant(s):

- a. cannot be located upon the exercise of due diligence;
- b. has been transferred or sold to, or deposited with, a third party;
- c. has been placed beyond the jurisdiction of the court;
- d. has been substantially diminished in value; or
- e. has been commingled with other property which cannot be divided without difficulty

the United States of America will be entitled to the forfeiture of substitute property pursuant to Title 21, United States Code, Section 853(p).

A TRUE BILL.

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FOREPERSON

Tiffany G. Becker  
Attorney for the United States,  
Acting Under Authority Conferred by 28 U.S.C. § 515

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Matthew T. Drake, #46499MO  
Assistant United States Attorney